

JH/US NRC STAFF REPORT UPDATE

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AUG 17 1990

Mr. Thomas H. Isaacs, Director
Office of Strategic Planning
and International Programs
Office of Civilian Radioactive
Waste Management
U.S. Department of Energy
Washington, D.C. 20585

Dear Mr. Isaacs:

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION STAFF REPORT UPDATE

In response to your June 29, 1990 memorandum, the staff of the U.S. Nuclear Regulatory Commission (NRC) has updated its part of the report "United States Radioactive Waste Management Programs in 1990." The update is based on the NRC section in a version of the report issued earlier this year, and is contained in the enclosure to this letter.

If you have any questions, please feel free to contact the NRC staff member responsible for the update, Joe Holonich. Mr. Holonich can be reached at (301) 492-3403 or FTS-492-3403.

Sincerely,

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Robert E. Browning, Director
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

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U.S. NUCLEAR REGULATORY COMMISSION HIGH-LEVEL WASTE PROGRAM IN 1990

REGULATORY DEVELOPMENT ACTIVITIES

A major aspect of the U.S. Nuclear Regulatory Commission's (NRC's) high-level waste (HLW) program has been to re-examine and clarify selected areas of NRC's regulations, 10 CFR 60 - Disposal of High-Level Radioactive Wastes in Geologic Repository. Completing this effort prior to the receipt of a license application for a repository for disposal of HLW will facilitate the licensing process for all parties involved, including the NRC staff, the U.S. Department of Energy (DOE), the repository host State, affected units of local government and Indian Tribes, and the adjudicatory system.

No new rulemaking actions were completed during this reporting period. However, on April 19, 1990, DOE submitted a petition for rulemaking for accident dose guidelines for a high-level waste repository. In its petition, DOE identified the need for regulatory requirements covering a design basis accident dose limit. Coincidental with the petition, the NRC staff is working on a rulemaking that would consider the concerns raised by the DOE petition. Independent of its rulemaking effort in this area, the NRC will also issue a final determination on the DOE petition in accordance with Commission procedures.

The NRC staff continued to interact with the U.S. Environmental Protection Agency (EPA) on EPA activities revising its standards on the management and disposal of radioactive waste. The NRC will conduct its rulemakings on the conformance of 10 CFR Part 60 and the implementation of the EPA standards generally in parallel with the revised EPA standards.

REGULATORY GUIDANCE ACTIVITIES

The NRC staff with assistance from its contractor the Center for Nuclear Waste Regulatory Analyses (CNWRA) is continuing to conduct its systematic analysis of 10 CFR Part 60 to identify uncertainties in the regulatory framework and to develop regulatory requirements and guidance to resolve these uncertainties. Technical Positions (TPs) are key mechanisms for providing guidance to DOE and are focused on staff criteria for acceptable methods of demonstrating compliance with 10 CFR Part 60.

One TP was published in draft form for public comment during fiscal year 1990: "Repository Design -- Regulatory Considerations in the Design and Construction of the Exploratory Shaft Facility."

In fiscal year 1990, the staff also began to develop a new form of guidance to resolve uncertainties -- Staff Positions. Unlike TPs, Staff Positions record the staff's interpretation of existing 10 CFR Part 60 regulatory requirements.

The three staff positions that were published in this year are:

- 1) SP-60-001; "Clarification of the 300-to-1,000 year period for substantially complete containment of high-level wastes within the waste packages under 10 CFR Part 60;"

ENCLOSURE

- 2) SP-60-002; "Performance Objectives Related to Isolation of the Waste;" and
- 3) SP-60-003; "Definition of the Term 'Performance Objectives' as used in 10 CFR 60.133(i)."

In addition to these guidance development activities, the NRC's CNWRA identified and made recommendations on regulatory and institutional uncertainties relevant to 10 CFR Part 60 in a report dated February 1990. The NRC staff is evaluating the uncertainties in the CNWRA's report and is determining the most appropriate method to reduce these uncertainties.

YUCCA MOUNTAIN SITE CHARACTERIZATION PROGRESS REPORT REVIEW

Under the Nuclear Waste Policy Act (NWPA), DOE is required to submit to NRC for review and comment a general plan for site characterization activities to be conducted at the candidate site before shaft sinking. DOE provided the Yucca Mountain, Nevada Site Characterization Plan (SCP) to NRC on December 28, 1988. In its Site Characterization Analysis (SCA) of the SCP issued on July 31, 1989, the NRC staff provided DOE with two objections and 196 comments and questions related to the SCP. These are being tracked as open items until they are resolved by means of information in SCP progress reports, other DOE documents, or by interactions between NRC and DOE.

On March 2, 1990, the DOE provided to NRC its first Progress Report on the Scientific Investigation Program for the Nevada Yucca Mountain Site (SCP Progress Report). Such reports, mandated at six month intervals by NWPA and 10 CFR Part 60, are to address progress, results, and changes in DOE's site characterization program, including site investigations, repository and waste package designs, and performance assessments. Based upon this Progress Report, NRC transmitted comments to DOE regarding the contents of future progress reports on June 25, 1990.

STATE INTERACTIONS

Nevada State and local representatives continue to participate in the technical exchanges and meetings between NRC and DOE. State, local and Tribal representatives also continue to receive notification of upcoming NRC/DOE HLW meetings, including NRC's Advisory Committee on Nuclear Waste transcripts and letter reports relative to the HLW program.

QUALITY ASSURANCE ACTIVITIES

The NRC staff's objective in its review of the DOE QA program is to establish confidence that work performed during site characterization is appropriately controlled and defensible in licensing before site characterization begins. During this year the staff continued its review of DOE's and DOE contractors' QA plans and procedures (document reviews) and evaluations of DOE's effectiveness in auditing its program to identify and correct problems in program implementation and DOE contractor effectiveness in implementing QA.

To conduct its evaluation of DOE's effectiveness in auditing and DOE contractor effectiveness in QA implementation, the NRC staff conducted observation audits, using teams composed of technical and QA staff from the NRC and QA staff from the CNWRA. The DOE audits were conducted at all major contractor organizations participating in the site characterization program for the Yucca Mountain Project. Formal staff reports were issued for all of the audit observations, and the DOE will have to respond to those where improvements are needed in the audit process.

WASTE CONFIDENCE

In August 1984, NRC issued its Waste Confidence Decision. In its Decision, the Commission made five findings on: (1) the technical feasibility of disposal; (2) the timing of repository availability and sufficient disposal capacity; (3) safe management of wastes until a repository is available; (4) duration of safe storage; and (5) ability to provide additional storage capacity, if needed. The Commission committed to review its findings at least every five years, until a repository for high-level waste is available.

In September 1988, the Waste Confidence Review Group was established to carry out the first five-year review of the original Decision. The Review Group provided the Commission its Proposed 1989 Waste Confidence Decision and Conforming Amendments to 10 CFR Part 51 in June 1989. In September 1989, the Proposed Decision and Proposed Rulemaking were published for comment. The Waste Confidence Review Group is considering and responding to the eleven public comments that were received.

The proposed Decision would revise two of the findings. The timing of repository availability would be extended to the first quarter of the twenty-first century, and the duration of safe storage would be revised to cover 30 years beyond the licensed life for operation of a reactor (which may include the term of a revised or renewed operating license.) The Proposed Amendment of 10 CFR Part 51 essentially conforms the regulation to these two revised findings. The proposed decision also extends the Commission's review of its findings to at least every ten years until a repository is available. A Final Decision and Rulemaking are planned for the latter half of 1990.

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

The CNWRA completes its third year of operation in October 1990. The transfer of all NRC technical assistance work from existing contractors has been completed. The level of support that the Center provided to NRC continued to increase throughout the third year. The CNWRA uses a systems approach to optimize the contribution of all its activities and resources to support NRC's licensing decisions and recommend research to reduce the uncertainties affecting these decisions.

The CNWRA during its third year continued the development of its technical and analytical capabilities, including the hiring of additional technical staff; work on nine research projects; and the ongoing systems engineering program to assist NRC in assuring that all NRC high-level waste activities required under the NWPA, as amended, are optimally planned, integrated, implemented, documented, and managed. The CNWRA provided technical support to the NRC staff by recommending regulatory requirements that should receive priority attention during NRC's

review of DOE's SCP; identifying regulatory and institutional uncertainties in 10 CFR Part 60; assisting in the NRC review of Study Plans; participating in NRC/DOE prelicensing technical exchange meetings; assisting in QA observation audits; providing technical support in developing NRC Technical Positions and Rulemakings, and assisting in the development of technical assistant capabilities and methods (e.g., computer codes).